pidly as the temperature increased, and at above 100° a portion of the power of the magnet was permanently destroyed.

In regard to the diurnal changes in the terrestrial intensity, the author's experiments lead him to suggest the following queries for the consideration of those who may have an opportunity of making such observations:—Does the time of the minimum intensity correspond with the time at which the sun is on the magnetic meridian? Does the time of maximum intensity correspond to the sun's passing the plane of the equator of the dipping-needle? Does any change take place in the intensity while the sun is below the horizon? Are any periodical effects corresponding to the time of rotation of the sun about its axis observable? Is the diurnal change of intensity at the time of new moon sensibly different from what it is at the time of quadrature? If the moon do produce an effect on the needle, it is evidently less than that of the sun;—should we then attribute it to solar heat, or to the magnetism of the sun?

*The Croonian Lecture. On the Existence of Nerves in the Placenta.* *By Sir* Everard Home, *Bart. V.P.R.S.* Read November 18, 1824. [*Phil. Trans.* 1825, *p.* 66.]

In this lecture the author makes known his discovery of the existence of nerves, both in the fœtal and maternal portions of the placenta. His previous researches had led him to doubt the existence of blood-vessels without nerves, and the extreme vascularity of the placenta led him to suspect them in that organ. With the assistance of Mr. Bauer, therefore, he first examined the placenta of the Seal, the arteries and veins of which had been injected, and in which nerves were discovered, not only surrounding the umbilical arteries, but also in the uterine portion.

In the pregnant uterus of the Tapir of Sumatra, in which, there being no placenta, the umbilical chord is connected with the chorion, the nerves were very conspicuous in the transparent portion of the chorion, along which the branches of the funis pass before they arrive at the spongy part.

Having thus established the existence of nerves in the placenta, and where that is wanting in the flocculent chorion, Sir Everard proceeds to offer some general remarks upon their probable uses and influences.

From the various sources, the number, and the ganglia of the uterine nerves, and from the circumstance of their becoming enlarged during pregnancy, he infers their powerful influence on the fœtus in utero; and for the further illustration of this subject, the author adds a description of the nerves connected with the generative organs in the human species, the quadruped, the bird, and the frog.

He concludes this lecture with remarking, that since the discovery of the placental nerves proves the existence of a communication through their medium, between the brain of the child and that of the mother, some light may be thrown on the degree of dependence

in which the fœtus is kept during the whole time of utero-gestation, and upon the influence of the bodily and mental affections of the mother upon the child; in further illustration of which, several instances are detailed in proof of the descent of various peculiarities of the mother to the offspring.

*Observations on the Changes the Ovum of the Frog undergoes during the Formation of the Tadpole. By Sir* Everard Home, *Bart. V.P.R.S.* Read November 25, 1824. [*Phil. Trans.* 1825, *p.* 81.]

The ova of the Frog, when examined in the ovaria, consist of dark coloured vesicles, which acquire a gelatinous covering on entering the oviduct, and are completely formed by the time they reach the cavities in which the oviducts terminate, and during their expulsion from which they receive the male influence; after this, the contents of the ovum, previously fluid, coagulate and expand, the central part being converted into brain and spinal marrow, while in the darker substance of the egg the heart and other viscera are formed. The membrane forming the vesicles being destined to contain the embryo when it has become a tadpole, enlarges as the embryo increases, and may be said to perform the office both of the shell and its lining membrane in the pullet's egg, serving as defence and allowing aëration. The black matter which lines the vesicle probably tends to the defence of the young animals from the too powerful influence of the solar rays, frogs' spawn being generally deposited in exposed situations. Sir Everard observes, that in the aquatic Salamander, an animal whose mode of breeding closely resembles the frog, this nigrum pigmentum is wanting; but that that animal deposits its eggs within the twisted leaves of water plants, which afford them an equivalent protection.

*A general Method of calculating the Angles made by any Planes of Crystals, and the Laws according to which they are formed. By the Rev.* W. Whewell, *F.R.S. Fellow of Trinity College, Cambridge.* Read November 25, 1824. [*Phil. Trans.* 1825, *p.* 87.]

The author, after stating the inconsistencies, inelegancies, and imperfections of the received notation for expressing the planes of a crystal, and the laws of decrement by which they arise, and of the usual methods of calculating their angles, explains the object of the present paper, which is to propose a system exempt from these inconveniencies, and adapted to reduce the mathematical portion of crystallography to a small number of simple formulæ, of universal application. According to the method here followed, each plane of a crystal is represented by a symbol indicative of the laws from which it results, which, by varying only its indices, may be made to represent any law whatever; and by means of these indices, and of the primary angles of the substance, we may derive a general formula expressing the dihedral angle contained between *any one plane* re-